

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 179 (USSR) SOV/137-58-12-25330

AUTHOR: Nesmelov, A. F.

TITLE: Investigation of the Machinability of ZISrM-583-100 Gold Alloy
(Issledovaniye obrabatyvayemosti rezaniyem zolotogo splava marki
ZISrM-583-100)

PERIODICAL: Sb. tr. Vses. n.i. in-t Goznaka, 1957, Nr 1, pp 271-305

ABSTRACT: The mechanical properties of the alloy and results of measurement of its machinability in relation to the chemical composition and type of heat treatment are adduced.

P. N.

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NESMELOV, A. F.: Master Tech Sci (diss) -- "Investigation of the process of cutting the gold alloy ELsRM-583-100". Moscow, 1958. 13 pp (Min Higher Educ USSR, Moscow Aviation Technological Inst), 110 copies (KL, No 1, 1959, 120)

N E S M E L O U , A. F.

25(1)

P. 2

PHASE I BOOK EXPLOITATION

SOV/3090

Moscow. Aviatsionnyy tekhnologicheskii institut

Issledovaniye protsessov vysokoproizvoditel'noy obrabotki metallov rezaniyem
(Analysis of High-productivity Metal-cutting Processes) Moscow, Oborongiz,
1959. 130 p. (Series: Its: Trudy, vyp. 38) 3,600 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Ed. (Title page): A.I. Isayev, Doctor of Technical Sciences, Professor; Ed.
(Inside book): S.I. Bumshteyn, Engineer; Ed. of Publishing House:
P.B. Morozova; Tech. Ed.: N.A. Pukhlikova; Managing Ed.: A.S. Zaymovskaya,
Engineer.

PURPOSE: This collection of articles is intended for designers and engineers
in the field of machine-tool equipment and mechanical machining. It may
also be useful to workers at scientific research institutes and aspirants.

COVERAGE: This collection of articles deals with problems arising in high-
productivity metal-cutting processes. Emphasis is given to grinding operations
for parts made from constructional alloys. Machining regimes and methods

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Analysis of (Cont.)

of improving machining operations are presented. No personalities are mentioned. References follow each article.

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1-29-60

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25(7)

PHASE I BOOK EXPLOITATION SOV/2982

Nesmelov, Aleksey Fedorovich, and Nina Andreyevna Avdonina

Almaznyye instrumenty v mashinostroyeni (Diamond Tools in Machine Building) Moscow, Mashgiz, 1959. 186 p. Errata slip inserted. 4,000 copies printed.

Reviewer: V.N. Mokiyenko, Engineer; Ed.: V.D. Sil'vestrov, Candidate of Technical Sciences; Ed. of Publishing House: N.A. Ivanova; Tech. Ed.: A.F. Uvarova; Managing Ed. for Literature on Metalworking and Tool Making: R.D. Beyzel'man.

PURPOSE: This book is intended for foremen, technicians, setup men, and workers in tool shops of machine-building plants. It may also be used as a manual for designers of equipment and fixtures for machine tools.

COVERAGE: The book contains information from Soviet and non-Soviet sources on the production and efficient utilization of diamond tools and their substitutes. Industrial experience in the production and use of diamond tools in truing grinding wheels, in

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Diamond Tools (Cont.)

hardness testing, in sheet-glass cutting, in wire drawing, and in machining hard minerals is discussed. Chapters I, V, and VIII were written by N.A. Avdonina, Engineer, and Chapters II, III, IV, VI, and VII by A.F. Nesmelov. No personalities are mentioned. There are 62 references: 51 Soviet, 10 English, and 1 German.

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NEKRASOV, A.F., kand. tekhn. nauk; ANAN'YAN, V.A., inzh.,
retsensent; RYKOV, S.A., kand. tekhn. nauk, red.

[Diamond tools in industry] Almaznye instrumenty v pro-
myshlennosti. Moskva, Izd-vo "Mashinostroenie," 1964.
342 p. (MIRA 17:8)

1ST AND 2ND CODES		PROCESSING AND PROPERTY CODE		2
<p>CA NESMELOV, A.V.</p>				
<p>Thermodynamics of nonideal systems. --A. V. Nesmelov. Trans. Kirov Inst. Chem. Tech. Kazan No. 6, 2-11(1960). --Math. equations for chem. equil. of non-ideal gas mixts. at high pressure are derived. A. A. Professing...</p>				
<p>ASB-SCA METALLURGICAL LITERATURE CLASSIFICATION</p>				
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		

NESELOV, A.V.

~~Theory of Bianchi's method. Trudy KMTI no.11:5-8 '47.~~

(MIRA 12:11)

(Ballistics, Interior)

NIKOLAEV, A.V.

Combustion velocity of colloidal gunpowders in confined spaces.

(MIRA 12:11)

Trudy KHMTI no.11:9-20 '47.

(Gunpowder)

(Combustion)

U

NESMELOV, L.V. (Moskva)

Meteorological satellite discovers forest fires. Priroda 52
no.7:113 J1 '63. (MIRA 16:8)

(No subject headings)

NESMELOV, L.V. (Moskva)

Age of a baobab. Priroda 53 no.2:118-119 '64.
(MIRA 17:2)

L 15551-66 EWT(1)/EWA(h)

ACC NR: NP6002088

SOURCE CODE: UR/0139/65/000/006/0098/0106

AUTHORS: Khlystov, A. S.; Nesmelov, N. S.

ORG: Siberian Physicotechnical Institute im. V. D. Kuznetsov
(Sibirskiy fiziko-tekhnicheskii institut)

25 TITLE: Ferrite resonant gates with coaxial, rectangular, and strip
wave guides containing dielectrics. I. Theoretical design of resonant
ferrite gates

SOURCE: IVUZ. Fizika, ⁴no. 6, 1965, 98-106

TOPIC TAGS: ferrite switch, rectification, waveguide element,
ferromagnetic resonance

ABSTRACT: The authors consider a plane-parallel analog of a coaxial
line, a rectangular waveguide, and a strip waveguide with ferrite
and dielectric plate inserts located in the E plane. Transcendental
equations are derived for the propagation constants of the electromag-
netic wave in these systems. An approximate solution of these equa-
tions is presented for ferrite plates of small thickness. Analytic

Card 1/2

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ACC NR: AP6002088

expressions are obtained for the rectification ratio in this system. It is shown analytically that in all cases the maximum rectification ratio occurs for resonant values of the magnetic field. For each system there is obtained an analytic expression for the optimal value of the ferrite magnetization, at which maximum rectification ratio should be observed. The optimal magnetization depends on the frequency and on the dielectric constant of the dielectric employed in the system, and on the geometry of the system. The maximum possible rectification ratio is the same for all three devices. Orig. art. has: 3 figures and 58 formulas.

SUB CODE: 20/ SUEM DATE: 15Apr64/ ORIG REF: 003/ OTH REF: 003

quency. The elliptical polarization is closest to circular when the occupation angle $t/z = 3/8$ at the dielectric-air boundary. In band waveguides, the optimum magnetization intensity asymptotically approaches zero with increasing thickness of the dielec-

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ACC NR: AP6033832

tric plate. In rectangular waveguides, the configuration of the superhigh frequency of the magnetization field varies at different points as a result of the influence of the lateral metal walls. The optimum magnetization intensity depends on the position of the dielectric plate. Dielectric losses were not taken into account in the calculations. Orig. art. has: 14 figures.

SUB CODE: 20/

SUBM DATE: 05Jan65/

ORIG REF: 002

Card 2/2

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NESMELOV, S.V.

13

A method of exact and rapid polishing of glass, quartz and agate on a hard polisher. I. V. Glebovskikh and S. V. Nesmelov. *J. Opt. Mech. Ind. (U. S. S. R.)* S. No. 11, 18(1974); *J. Soc. Glass Tech.* 58, 422A. A method is suggested for the polishing on a hard polisher of glass, Ni or cast Fe. As polishing powder, Cr_2O_3 is employed, obtained by igniting $\text{K}_2\text{Cr}_2\text{O}_7$ with S and, after washing, leaching it again at different temps., depending on the quality of the polisher required. The liquid used as a lubricant contains some org. substances yielding an emulsion with water. Mixts. of such materials with glycerol contg. some water are recommended. The prepn. of the polisher, including the laying on of the liquid and polishing powder, in min. quantity, is of great importance. This method is suitable for the prepn. of plane and spherical test glasses, plexiglass plates, agate pelms for chem. balances, etc. The method can be applied to the production of normal glass disks, taps and optical glass parts which are afterward cemented together. G. G.

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NESMELOV, S.V.

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Polishing of metals with "G10" paste. S. W. Nesme-
lov. Optika-Mekhan. Prom. 9, No. 3, 11-13(1939); Chem.
Zvest. 1939, 11, 1271. —Of the different oxides tested for
polishes for glass and metals the best results were obtained
with Cr_2O_3 . Differences exist in the action depending upon
the method of prep.; the product obtained by the fol-
lowing formula is given: Cr_2O_3 74, SiO_2 gel 1.8, stearic
acid 10, H_2O 10, NaHCO_3 0.2 and
ketone 2%. Information is also given regarding the
method of application of the polish, etc. The process is
accelerated by the use of Cr_2O_3 which has been heated at
1000° in a coarse paste. In this case Cr_2O_3 obtained from
for the coarse paste: Cr_2O_3 80, SiO_2 gel 2, stearic 10, and
ketone 2%. Some of the tech. uses of the polishes
tested are discussed. M. G. Moore

ASH-LLA METALLURGICAL LITERATURE CLASSIFICATION

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NESMELOV, S.V.

PRIKHOT'KO, A.F.

24(7) p 3 PHASE I BOOK EXPLOITATION 807/1365

L'vov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. S. 1: Molekulyarnaya spektroskopiya (papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Ita: Fizichnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Jaser, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Laviat'skiy, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabelinskiy, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyarskiy, V.S., Candidate of Physical and Mathematical Sciences, and Glauben, A. Ye., Candidate of Physical and Mathematical Sciences.

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Festovskiy, I. Ya., L.P. Trefilova, Yu. N. Shenyuker, and S.G. Bogomolov. Coplanarity of Phenol Molecules in Diphenyl Derivatives 388

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NESMELOV, S.V.

MARKSYUTA, V.I.

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807/1580

(12)

USSR. Gosstatizdaty univ. tekhnicheskoy literatury

Automatskiye khimicheskikh i khimicheskikh proizvodstv; sbornik statey
(Automation of the Chemical and By-product Coking Industries) Moscow,
Metallurgizdat, 1958, 111 p. 8,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Institut mashinostroyeniya i tekhnicheskoy informatsii.

Eds.: V.Ya. Fost, V.N. Yelshin, and Yu.S. Gerasimov; Ed. of Publishing House: N.N. Lomovskiy; Tech. Ed.: N.P. Gerasimov.

PURPOSE: This book is intended for industrial engineers and technologists interested in the state of industrial automation and may be especially useful to organizations concerned with the multifarious automation problems of the chemical industry.

COVERAGE: This collection was compiled to fulfill to some degree the need for a readily accessible information source on the latest developments in the automation of industrial processes, both foreign and domestic, and to give supplementary information on the automation state of several chemical, metallurgical, petroleum and textile-millinery production processes.

Nesmelov, S.V., A.N. Shchekin, and A.I. Papp. Automation of the Petroleum Refining and Petroleum-Chemical Industries

394

AVAILABLE: Library of Congress

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8(0), 11(4)

SOV/112-59-4-7662

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 4, p 174 (USSR)

AUTHOR: Nesmelov, S. V., Bakutkin, A. B., and Popov, A. A.

TITLE: Automating Oil-Refinery and Petro-Chemical Industries

PERIODICAL: V sb.: Avtomatiz. khim. i koksokhim. proiz-v. M., Metallurgizdat, 1958, pp 354-378

ABSTRACT: A classification of degrees of automation applicable to the oil-refinery industry is presented; it is illustrated by examples. The expected effectiveness of automation at the Ryazan' and Moscow oil refineries is reported. The requirements of the processes scheduled for automation and the requirements of the apparatus are listed. Principal trends in automating oil-refinery and oil-chemical industries and the means of automation are considered. Atmosphere installations for refining the raw oil and the installations of 2-furnace thermal cracking which use a pneumatic monitoring and an automatic system are described. Expenses for automation at such installations amount to about 5%

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SOV/112-59-4-7662

Automating Oil-Refinery and Petro Chemical Industries

of their cost. A scheme of an installation for polymerization of propane-propylene fraction for producing polypropylenes is described. Principal automation-and-monitoring means that are needed for raising the degree of automation at the existing oil refineries and for realizing a complex process automation at new plants are listed. A brief characterization of the state of automation of foreign oil refineries is given.

A.A.S.

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SOV/51-4-8-11/24

AUTHORS: Gerasimov, F.M., Tel'tevskiy, I.A., Naumov, S.S., Spizharskiy, S.N. and Nesmelov, S.V.

TITLE: Diffraction Gratings from the State Optical Institute (Difraktsionnyye reshetki Gosudarstvennogo Opticheskogo Instituta)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 6, pp 779-790 (USSR)

ABSTRACT: The present paper describes briefly the technique of preparation of optical diffraction gratings at the State Optical Institute imeni S.I. Vavilov and discusses in detail the optical characteristics of these gratings in the ultraviolet, visible and near infrared spectral regions. The technique of preparation of gratings was fully described in References 1, 2. Echellette gratings for the wavelengths 2.5-600 μ were described in a paper presented at the Xth All-Union Conference on Spectroscopy (Ref 3). The gratings are prepared by means of a screw-motion ruling machine (Fig 1) which can produce gratings of 150 x 150 mm area with 1200, 600, 300 and 200 lines/mm. This machine does not differ from the majority of machines described in literature. Figs 2 and 3 show certain details of the carriage of the ruling machine at the Institute. A typical profile of a diffraction grating is shown in Fig 4. The lower part of the figure shows

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Diffraction Gratings from the State Optical Institute

an electron microscope image of a grating with 1200 lines/mm. The optical characteristics of the gratings produced are discussed as well as the sources of certain errors. The resolving power of better gratings reaches 600 000. The relative intensity of Rowland's "ghosts" in the first order of gratings with 600 lines/mm is about 0.1%, and in better gratings it may be only 0.01%. The gratings of the State Optical Institute produce a high concentration of light in a given direction. Thus gratings with a step-like profile, with a slope of the working edge of $5-10^{\circ}$, concentrate in the maximum up to 85% of the total reflected light, which is near the theoretical limit. A characteristic change in the polarization properties of gratings was observed in the region of the maximum light concentration. On the short-wavelength side of the maximum the component with electric vector vibrations parallel to the grating lines is the more intense, and on the long-wavelength side of the maximum the component with electric vector vibrations perpendicular to the grating lines is stronger (Fig 10). There are 10 figures and 17 references, 8 of which are Soviet, 4 English, 3 American, 1 German and 1 translation of a Western work into Russian.

Card 2/2

ASSOCIATION: Gosudarstvennyy Opticheskiy Institut im. S.I. Vavilova (State Optical Institute imeni S.I. Vavilov)

SUBMITTED: January 17, 1958

L'VOV, M.A., kand. tekhn. nauk, dots. [deceased]; SHENDLER, Yu.I.,
kand. tekhn. nauk; NESMELOV, S.V., inzh., zam. glav. red.;
GOR'KOVA, A.A., ved. red.; SOLGANIK, G.Ya., ved. red.;
YAKOVLEVA, Z.I., tekhn. red.

[Automation and control apparatus for production processes
of the petroleum and petrochemical industries] Avtomatiza-
tsia, pribory kontrolya i regulirovaniya proizvodstvennykh
protsessov v neftegianoi i neftekhimicheskoi promyshlennosti.
Moskva, Izd-vo "Nedra." Book 2. [Apparatus for controlling
pressures, consumption and amount of substance, level and
temperature. Secondary apparatus and multiple control machines]
Pribory kontrolya davleniya, raskhoda i kolichestva veshche-
stva, urovnia, temperatury. Vtorichnye pribory i mashiny mno-
zhestvennogo kontrolya. 1964. 870 p. (MIRA 17:4)

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BOOK EXPLOITATION

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Baysh, L. G.; Brusteyn, L. I.; Voskresenskiy, V. N.; Makulov, G. Z.;
Mirzabekov, G. G.; Nesmelov, S. V.; Nemirovskiy, A. B.; Pavlovskiy, A. N.;
Shendler, YU. I.

Devices for control of pressure, outlay and quantity of material, level, temperature. Secondary devices and multiple control machinery. v2 (Pribory* kontrolya davleniya, raskhoda i kolichestva veshchestva, urovnya, temperatury*. Vtorichny*ye pribory* i mashiny* mnozhestvennogo kontrolya. Kn. 2), Moscow, "Nadra", 1964, 870 p. illus., biblio., index. Errata slip inserted. 5,300 copies printed.

TOPIC TAGS: pressure measurement, manometer, diffmanometer, flowmeter, level measurement, temperature measurment, thermocouple, thermal expansion, electrical resistance thermometer, current ratio measurement, electronic computer

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- Ch. XXXXI. Pneumatic system of transmission (G. G. Mirzabekov) -- 773
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- Card 4/5

AM037196

- Ch. XXXXII. Designation, operating principles, circuits, and classification of systems of control and regulation with electronic computers for centralized control and regulation of engineering processes -- 786
- Ch. XXXXIII. Circuits and design of basic functional blocks of machines for centralized control and regulation -- 796
- Ch. XXXXIII. Control-information and control-information computers -- 847

SUB CODE: EE, FP

SUBMITTED: 30Oct63

NR REF SOV: 045

OTHER: 007

DATE ACQ: 06Apr64

Card 5/5

ALEKSEYEV, S.A.; ZHMAKIN, D.F.; KEREKESH, V.V.; MALOV, A.N.;
 MARTSINOVSKIY, P.I.; MOLOTOK, A.V.; NESMELOV, V.A.;
 TEVEROVSKIY, P.A.; KHISIN, R.I.; DELITSIN, A.A., retsenzent;
 SOKHNOVSKIY, M.A., retsenzent; STEFANOV, V.P., retsenzent;
 STOROZHEV, M.V., retsenzent; TALANOV, P.I., retsenzent;
 FAL'KEVICH, A.S., retsenzent; CHERNUSHEVICH, V.A., retsenzent;
 KHISIN, R.I., red.; GAL'TSOV, A.D., red.; VOL'SKIY, V.S., red.;
 STRUZHESTRAKH, Ye.I., red.; SEMENOVA, M.M., red. izd-va; MODEL',
 B.I., tekhn. red.

[Manual for the establishment of norms in the machinery industry
 in 4 volumes] Spravochnik normirovshchika-mashinostroitelia v
 4 tomakh. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-
 ry. Vol.3. [Establishing norms for founding, stamping, welding,
 painting, metal plating, and woodwork] Normirovanie liteinykh,
 kuznechnykh, shtampovochnykh, svarochnykh, lakokrasochnykh ra-
 bot, metallopokrytii i derevoobrabotki. 1962. 671 p.

(MIRA 15:4)

(Machinery industry—Production standards)

SVERDLOV, A.B.; ZIGMUND, F.F.; NESMELOV, V.V.

Extracting lanolin from wash water of the Kazan Fur Combine.
Trudy KKHTI no.13:85-89 '48. (MIRA 12:12)

1.Kazanskiy khimiko-tehnologicheskii institut im. S.M. Kirova,
kafedra obshchey khimicheskoy tekhnologii.
(Kazan--Wool-fat)

NESMELOV, V. V.

24090

NESMELOV, V. V. K istorii promyshlennosti gidrogenizatsii zhirov v Rossii.
(O rabotakh S. A. Fokina i M. V. Vil'kushevicha). Uspekhi Khimii, 1949.
VYP. 4, S. 481-87. - Bibliogr: S. 487.

SO: Letopis, No. 32, 1949.

NESMELOV, V.V.

History of the oils and fats hydrogenation industry in Russia.
Trudy EKHTI no.14:65-74 '49. (MIRA 12:11)

1.Kafedra obshchey khimicheskoy tekhnologii Kazanskogo khimiko-
tekhnologicheskogo instituta im. S.M. Kirova.
(Oil industries) (Hydrogenation)

CR

History of the industry of hydrogenation of fats in Russia
L. N. Kiselev. *Doklady Akad. Nauk SSSR* 1964, 181, 711-714.
N. I. Kiselev

1967

NESMELOV, V.V.

Certain facts on the role played by the Kazan School of
Chemists in the origin and development of the Soviet chemical
industry. Trudy EKHTI no.15:147-153 '50. [publ. '51]
(MIRA 12:12)
(Chemical industries) (Kazan--Chemists)

NESMELOV, V.V.

Priority of Russian science in the discovery and industrial application
of present-day methods of the catalytic hydrogenation of fats. Trudy
EKRTI no.16:61-70 '51 [Publ. '52]. (MIRA 12:12)
(Oil and fats) (Hydrogenation)

NESMELOV, V.V.

History of the production of ammonia soda in Russia. Trudy Inst.
ist.est.i tekhn. vol.6:347-366 '55. (MLRA 9:5)
(Ammonia soda)

BEZZUBOV, Leonid Pavlovich; BELOZEROV, A.I., retsenzent; NESMELOV, V.V.,
retsenzent; BZHEKHIN, V.P., retsenzent; spetsredaktor; ~~MASTOVA~~,
Ye.F., redaktor; GOTLIB, E.M., tekhnicheskii redaktor

[Chemistry of fats] Khimii zhirov. Moskva, Pishchepromizdat, 1956.
226 p. (MLRA 10:4)

(Oils and fats)

~~NEZHEKHOV, V.V.~~; TERPILOVSKIY, N.N.; MAMINOV, O.V.; LEBEDNEVA, N.M.;
DANYUSHNEVSKAYA, R.G.

Continuous oxidation of foaming paraffins by molecular oxygen.
Khim. nauka i prom. 3 no.1:130 '58. (MIRA 11:3)

1. Kazanskiy khimiko-tehnologicheskii institut im. S.M. Kirova.
(Paraffins) (Oxidation)

5(1, 3)
AUTHORS:

SOV/153-58-5-25/28

Maminov, O. V., Nesmelov, V. V., Terpilovskiy, N. N.,
Lebedeva, N. M., Danyushevskaya, R. G.

TITLE:

Some Characteristic Features of the Hydrodynamics of the Foam
Layer of the Paraffin - Air System (Nekotoryye osobennosti
gidrodinamiki pennogo sloya sistemy parafin-vozdukh)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
tekhnologiya, 1958, Nr 5, pp 149-153 (USSR)

ABSTRACT:

Paraffin oxidation is an exothermal process. The atmospheric oxygen is absorbed by paraffin by entering certain chemical reactions with the latter. In this case the mass exchange between air and paraffin depends to a high degree upon the hydrodynamic working conditions of the apparatus. The mass exchange is to a high degree influenced by the degree of turbidity of the gas and liquid flow (Ref 1). Under certain conditions of the motion in the turbulent range the gas becomes a disperse medium distributing within the liquid phase. The contact surface is enlarged and is rapidly renewed. These hydrodynamic conditions cannot be produced in the usual bubbling columns with periodic drive. The capacity of such columns is extremely insufficient.

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SOV/153-58-5-25/28

Some Characteristic Features of the Hydrodynamics of the Foam Layer of the Paraffin - Air System

In the foam apparatus as devised by Pozin and his collaborators (Ref 2) there are, however, very favorable conditions. To use this apparatus for paraffin oxidation several constructional modifications were necessary, like, installation of electrical heating, cooling coils etc. Experiments have shown that paraffin can be oxidized continuously in a foam layer. The rate of oxidation increases thereby by the 8-12 fold, since high turbidity is attained. Table 1 (p 151) shows the influence exerted by different air velocities and different types of raw materials upon the foam formation and the degree of oxidation as well as the losses of paraffin. The oxidation was carried out for 15 minutes at 160° and in the presence of manganese dioxide as catalyst. The results tend to show a dependence between the foam formation and the efficiency of the oxidation process. The more of the liquid is transformed into foam, and the higher the foam layer is the more perfect the oxidation process takes place. Pure paraffin without additions is very difficult to transform into foam at temperatures up to 160°, even at higher air velocities. Above 170° this takes place easier, but then again the quality of the oxidation products

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SOV/153-58-5-25/28

Some Characteristic Features of the Hydrodynamics of the Foam Layer of the Paraffin - Air System

suffers. The addition of regained paraffin or of 2-5% oxidized paraffin increases the foam formation rapidly. Then the surface active substances (alcohols) contained therein play a positive role. High air velocities (higher than 0.2 m/sec.) are unfavorable for the transformation of the whole paraffin into foam. The intensity of the oxidation is decreased, a heat supply becomes necessary, and finally reaction products are carried along by air and are removed. The air velocity of 0.1 m/sec. is optimal. A system in which the catalyst is distributed in the form of colloidal particles favors the foam formation. Perforated bottoms with openings of 1-2 mm covering 80-90% of the total surface are good for the foam formation. There are 1 table and 3 Soviet references.

ASSOCIATION: Kazanskiy khimiko-tehnologicheskii institut, Kafedra obshchey khimicheskoy tekhnologii (Kazan' Chemo-Technological Institute, Chair of General Chemical Technology)

Card 3/4

5(1,3)

AUTHORS:

Nesmelov, V. V., Maminov, O. V.,
Lebedeva, N. M., Danyushevskaya, R. G.,
Terpilovskiy, N. N.

SOV/153-58-6-19/22

TITLE:

Continuous Oxidation of Paraffin in Foam State in Apparatus
of the Rotor- and Bottom Type (Neprieryvnoye okisleniye
parafina v pennom sostoyanii v apparatakh rotornogo i
polochnogo tipa)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, 1958, Nr 6, pp 108-114 (USSR)

ABSTRACT:

The interaction between gases and liquids is very intensive
in foam state (Refs 1,2). In the present paper the results
of the oxidation mentioned in the title with molecular oxygen
are discussed. This process belongs to the complex chemical
heterogeneous catalytic processes with a chain mechanism of
the reaction. The best results were obtained when the whole
initial material was transformed in well mobile foam. The
rate of process depends on the height of the foam in the
oxidation column. However, completely satisfactory outputs
of the foam apparatus can only be obtained in the case of a
continuous process. The authors investigated two methods

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**Continuous Oxidation of Paraffin in Foam State
in Apparatus of the Rotor- and Bottom Type**

SOV/153-58-6-19/22

of foam production from paraffin: 1) use of the centrifugal force in a rotor apparatus; 2) exploitation of the kinetic energy of the gaseous reagent, i.e. air which is blown through a perforated cotton and forms a support in order to maintain the foam on the bottom. The extended laboratories in the Kazan' nefteaslozavod (Kazan' Petroleum and Oil Refinery) were used for the experiment. B. Ya. Konovalov, Director, and A. S. Moiseyeva, Head Engineer, collaborated in the experiment; A. A. Aleksandroviskiy, Assistant of the Kazan' Institute of Chemical Technology imeni S. M. Kirov, M. S. Khaykin, V. V. Levandovskiy, A. V. Matuzova and V. P. Solov'yeva, assistant chemists, collaborated in the experimental part. A rotor apparatus worked out by V. S. Nikolayev, Docent of the Kazan' Institute of Chemical Technology imeni S. M. Kirov (Fig 1) served for the experiments; paraffin of Groznyy, Drogobych, and Novokuybyshevsk was used as material. Potassium permanganate and soda were used as catalysts. The following conclusions were drawn: 1) the following facts are very important: a) The oxidation is imperfect if the paraffin is kept longer than 100 seconds

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Continuous Oxidation of Paraffin in Foam State
in Apparatus of the Rotor- and Bottom Type

SOV/153-58-6-19/22

in the apparatus, b) The initial temperature of the process is below 140°, c) The variation of the air consumption does not influence the time during which the paraffin is in the apparatus. Two processes take place at the same time: oxidation and distillation. e) An intensive resin- and mud formation takes place at temperatures above 150°. f) The optimum paraffin consumption amounts to 10-20 l/hour. g) The maximum rate of oxidation is reached at 740 rpm. However, a transparent model shows that an intensive foam formation takes place only at certain places of the apparatus. The time the paraffin remains in the apparatus must be at least five times longer in order to obtain a better oxidation intensity. This would increase and complicate its structure. However, the rate of oxidation in foam oxidation apparatus (Fig 2) with bottoms is after the increase of the acid numbers 8-12 times and after the increase of aliphatic acids (Table 1) 20 times higher than in periodically working apparatus of the bubbling type. The capacity is 2-3-5 times higher. The oxidation proceeds mainly under the formation of carboxylic acids. Higher temperatures did not deteriorate the quality

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Continuous Oxidation of Paraffin in Foam State
in Apparatus of the Rotor- and Bottom Type

SOV/153-58-6-19/22

of the products. Thus the oxidation may be intensified. Rotor apparatus have a lower capacity, are, however, well suitable for the formation processes of neutral oxygen-containing products. In foam oxidation apparatus heat conditions are easily regulated. There are 2 figures, 2 tables, and 2 Soviet references.

ASSOCIATION: Kafedra obshchey khimicheskoy tekhnologii, Kazanskiy khimiko-tekhnologicheskii institut imeni S. M. Kirova (Chair of General Chemical Technology, Kazan' Institute of Chemical Technology imeni S. M. Kirov)

SUBMITTED: November 10, 1957

Card 4/4

NESMELOV, V.V., kand. tekhn. nauk; LEBEDOVA, N.M., kand. khim. nauk;
DANYUSHEVSKAYA, R.G.; TRIFILOVSKIY, N.N., kand. tekhn. nauk;
MAKINOV, O.V., kand. tekhn. nauk

Continuous oxidation of paraffin in a foamy state. Masl.-zhir. prom.
24 no. 6:20-26 '58. (MIRA 11:7)

1. Kazanskiy khimiko-tekhnologicheskii institut imeni S.M.Kirova.
(Paraffins)

NESMELOV, V.V.; MAMINOV, O.V.; TERPILOVSKIY, N.N.; LEBEDEVA, N.M.;
DANYUSHEVSKAYA, R.G.

Problem of foam formation during the oxidation of paraffin in
bubble columns and in a continuous foam oxidizer. Trudy KKHTI
no.26:15-18 '59. (MIRA 15:5)
(Paraffins) (Oxidation)

NESMELOV, V.V.; TERPILOVSKIY, N.M.; LEBEDEVA, N.M.; DANYUSHEVSKAYA, R.G.;
~~MININOV~~, O.V.

Study of the oxidation of Novo-Ufinsk paraffin in the foaming
state in the presence of manganese dioxide. Trudy KKHTI no.26:
19-22 '59. (MIRA 15:5)
(Paraffins) (Oxidation)

NESELOV, V.V., kand.tekhn.nauk; LEBEDOVA, N.M., kand.tekhn.nauk;
TERPILOVSKIY, N.M., kand.tekhn.nauk; MAKINOV, O.V., kand.tekhn.
nauk; MAKINOV, O.V., kand.tekhn.nauk; DANYUSHEVSKAYA, R.G.

Oxidation of paraffins in a foaming state. Masl.-zhir.prom.
26 no.1:15-18 Ja '60. (MIRA 13:4)

1. Kazanskiy khimiko-tekhnologicheskii institut imeni S.M.
Kirova.

(Paraffins) (Oxidation)

NESMELOV, V.V.; MAMINOV, O.V.; TERPILOVSKIY, N.N.; LEBEDEVA, N.M.

Alteration of certain physical properties of paraffin in the process of its oxidation in the foamed condition. Izv. vys. ucheb. zav.; khim. i khim. tekhn. 4 no. 2:283-286 '61.

(MIRA 14:5)

1. Kazanskiy khimiko-tekhnologicheskii institut im. S.M. Kirova.
Kafedra obshchey khimicheskoy tekhnologii.
(Paraffins) (Oxidation)

SHVETSOV, V.; NESMELOV, V.; LEBEDEVA, N.

Recovery of dichloroethane vapors in a foam layer. *Kias.ind.SSSR*
32 no.6:54-56 '61. (MIRA 15:2)

1. Kazanskiy khimiko-tekhnologicheskii institut im. Kirova.
(Ethane)

SEDACHEV, V.M.; NESMELOV, V.V.; MOISEYeva, A.S.; LEBEDEVA, N.M.;
KUZNETSOVA, I.M.; LATYPOV, R.Sh.; TERPILOVSKIY, N.N.;
MAMINOV, O.V.

Oxidation of paraffin in a foam state. Khim. i tekhn. topl.
i masel 8 no.5:18-22 My '63. (MIRA 16:8)

LEBEDEVA, N.M.; NESMELOV, V.V.; RYSAYEVA, L.D.; MADIYAKINA, R.V.

Selecting the optimum conditions for the oxidation of paraffins in
a foam state. Khim.i tekhn.topl.i masel 8 no.11:15-20 N '63.
(MIRA 16:12)

1. Kazanskiy khimiko-tekhnologicheskii institut imeni Kirova.

NESMELOV, V.V.; LEBEDEVA, N.M.; LATYPOV, R.Sh.; MAMINOV, O.V.;
RYSAYEVA, L.D.

Continuous oxidation of hydrocarbon raw materials in the foam
state. Khim. i tekhn. topl. i masel 10 no.3:23-25 Mr '65.
(MIRA 18:11)

1. Kazanskiy khimiko-tekhnologicheskii institut im. S.M. Kirova.

LEBEDEVA, N.M.; NESMELOV, V.V.; LATYPOV, R.Sh.

Experimental industrial testing of the continuous method of paraffin
oxidation. Khim. i tekhn. topl. i masel 10 no.7:32-35 J1 '65. (MIRA 18:9)

1. Kazanskiy khimiko-tekhnologicheskii institut im. S.M.Kirova.

AUTHORS: Gisin, M.A., and Nesmelov, Ye.A.

TITLE: Interference light filters transmitting short-wave length and reflecting long-wave length regions of the spectrum

PERIODICAL: Optika i spektroskopiya, v.14, no.3, 1963, 395-400

TEXT: The theory for multilayer filters using alternate layers of high and low refractive index materials with layer thicknesses of $\lambda/4$ is developed and compared with experimental data. The method used is similar to that of Ph.W. Baumeister (J.Opt.Soc.Amer., 48, 1958, 955). Refractive index of the first, third, etc. layers $n_H = 2.5$ while for the second, fourth etc. layers the refractive index $n_L = 1.4$ and the refractive index of the base $n_D = 1.5$. These values are very near to those for Sb_2S_3 , SrF_2 and the glass K-8. A simplified expression for the ratio of reflection to transmission is given by:

$$\frac{R}{T} = \sum_{k, \ell} v_k v_\ell \cos 2 \left(\sum_{m=1}^k \xi_m - \sum_{n=1}^{\ell} \xi_n \right) \varphi = \sum_{k, \ell} v_k v_\ell \cos 2 \xi_{k\ell} \varphi \quad (2)$$

L 05631-67 EWT(1)/EWT(a)/T/EWP(b)/ETI LIP(c) JUVG

ACC NR: AF6024505

SOURCE CODE: UR/0181/66/008/007/2258/2260

AUTHOR: Baryshev, N. S.; Vdovkina, Ye. Ye.; Martynovich, A. P.; Nesmelova, I. M.;
Tsitsina, N. P.; Aver'yanov, I. S.

ORG: none

TITLE: Deep energy levels in indium antimonide

SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2258-2260

TOPIC TAGS: indium compound, antimonide, impurity level, forbidden band, Hall effect, carrier density, carrier lifetime, photoconductivity, photoelectromagnetic effect

ABSTRACT: The authors have investigated certain electric properties of single crystals of InSb with uncompensated-impurity density $10^{12} - 10^{16} \text{ cm}^{-3}$. The positions of the deep levels in the forbidden band were determined, the concentrations of the corresponding centers obtained, and their recombination properties investigated. The test consisted of measuring the Hall effect and the conductivity in p-type crystals grown by the Czochralski method and doped with germanium, or else obtained by multiple zone melting, in the interval 55 - 300K. The temperature dependence of the Hall coefficient shows, for samples with uncompensated-acceptor density lower than 10^{14} cm^{-3} , the presence of two regions of quenching (below the Hall inversion point and at low temperatures) and a sloping region between them. The results are explained by assuming the existence of three levels (shallow donor and acceptor levels and a deep donor level), the degree of filling of which depends on the temperature. To observe

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L 05631-67

ACC NR: AP6024505

the deep levels, the transmission of several samples with carrier density $n \sim 10^{14}$ cm^{-3} was investigated at 55 and 77K in the spectral interval 5 - 15 μ . A weak absorption band was observed near 9.3 μ , and it is attributed to the ionization of the deep levels. Measurements of the stationary photoelectromagnetic effect and the photoconductivity were used also to investigate the temperature dependence of the lifetime of the carriers, and the results obtained agreed with the published data. The authors thank K. Ya. Shtivel'man for a useful discussion. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 23Nov65/ ORIG REF: 004/ OTH REF: 007

Card

2/2 *lyk*

40896

S/181/62/004/009/036/045
B104/B186

24.7700
26 24 20

AUTHORS: Kosman, M. S., and Nesmelova, L. I.

TITLE: Negative photoconductivity of cuprous oxide near a point contact

PERIODICAL: Fizika tverdogo tela, v. 4, no. 9, 1962, 2608 - 2610

TEXT: The processes taking place in polycrystalline cuprous oxides ($\rho = 10^3$ ohm-cm) near the electrodes and at a certain distance from them were studied separately. The experiments were made at room temperature, in normal air humidity, with one point electrode, and one plane electrode. The specimens were irradiated with pulses of white light. The current passing through them was kept constant. The changes in the potential distribution along the specimen under the action of the light pulses were measured. The potential distribution (Fig. 1) is highly nonlinear and the sign of photoconductivity changes along the specimen. In the region (ab) (Fig. 1) photoconductivity is negative and the relaxation time is in the range of 10^{-2} sec. A positive photoconductivity with a relaxation time

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S/181/62/004/009/036/045
B104/B186

Negative photoconductivity...

of some seconds exists over the entire specimen (AB). The region (ab) is at a distance of 10^{-2} cm from the point electrode; it is only a small part of the specimen and has no photo-emf. If the point electrode is replaced by a plane electrode, then negative photoconductivity disappears. The nature of this phenomenon cannot be explained. Therefore, the studies are being continued. There are 2 figures. f

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut im.
A. I. Gertsena (Leningrad State Pedagogical Institute imeni
A. I. Gertsen)

SUBMITTED: May 15, 1962

Fig. 1. Potential distribution along the specimen.
Legend: (A) point electrode; (B) plane electrode.

Card 2/12

NESMELOVA, L.I.

Relation between the field effect and the properties of a point
contact. Fiz. tver. tela 5 no.10:3023-3024 0 '63. (MIRA 16:11)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A.I.
Gertsena.

L 19394-66 ENT(1)/FCC GW/38

ACCESSION NR: AT5011176

UR/0000/64/000/000/0223/0226

AUTHOR: Zuyev, V. Ye.; Nesnelova, L. I.; Sapozhnikova, V. A.; Tvorogov, S. D.

TITLE: Calculations of atmospheric transparency for infrared radiation

SOURCE: Mezhvedomstvennoye soveshchaniye po aktinometrii i optike atmosfery, 5th, Moscow, 1963. Aktinometriya i optika atmosfery (Actinometry and atmospheric optics); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 223-286

TOPIC TAGS: infrared radiation, atmospheric water vapor, atmospheric transparency, atmospheric light absorption, atmospheric optics

ABSTRACT: Precise computation of the absorption coefficient and the absorption function for the infrared absorption spectra of the principal absorbing components of the atmosphere is discussed. Such computations require knowledge of a large number of parameters char-

theoretical study of infrared radiative behavior of gases, 1964, at this address, etc.

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L 19394-66

ACCESSION NR: AT5011176

statistical model is applied to a quite narrow spectral range so that, within this interval, any position of lines is equi-probable. The values for water vapor, carbon dioxide and ozone used in this paper were taken from the literature. Computations of absorption in the ozone band were made for heights of 10 and 21 km. The results are shown in Figures 1-4 of the Enclosure. Figures 1 and 2 show the spectrum of the water vapor and carbon dioxide bands (with overlapping taken into account) for pressures of 1 and 0.3 atm. Fig. 3 shows the spectrum of the ozone band for a pressure of 1 atm. Fig. 4 shows the

absorption of carbon dioxide. Orig. art. has: 2 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete (Siberian Physics and Technology Institute at Tomsk State University)

SUBMITTED: 25Nov64

ENCL: 04

SUB CODE: ES

NO REF SOV: 001

OTHER: 004

Card 2/6

L 19394-66

ACCESSION NR: AT5011176

ENCL: 01

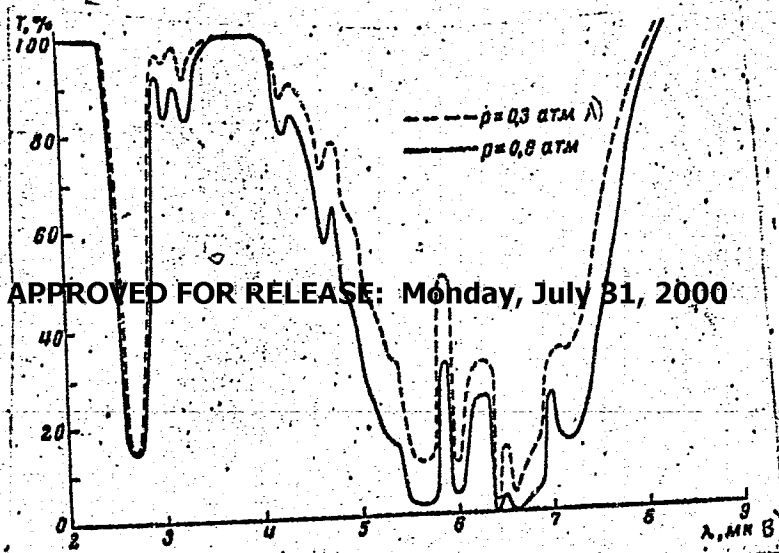
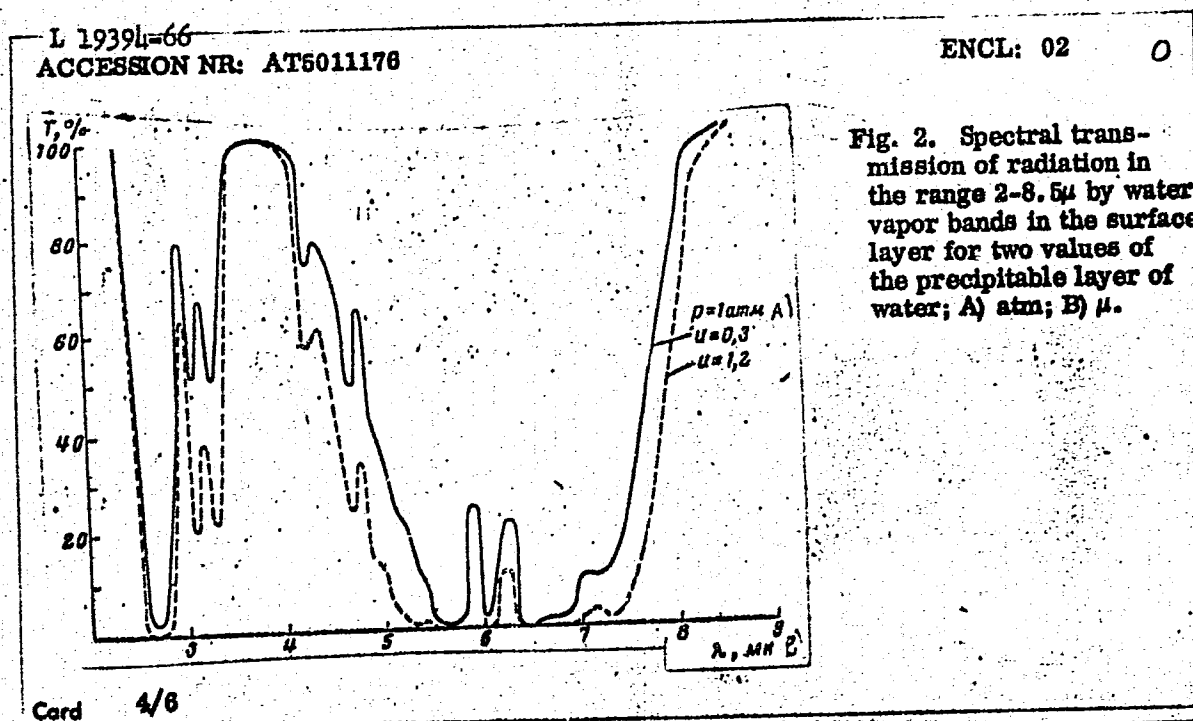


Fig. 1. Spectral transmission of radiation in the range 2-8.5 μ by water vapor bands for a precipitable layer of water $\mu = 0.2$ cm for two pressures at heights of 10 and 1 km. A) atm; B) μ .

APPROVED FOR RELEASE: Monday, July 31, 2000

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Card 3/6



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ACCESSION NR: AT5011176

ENCL: 03
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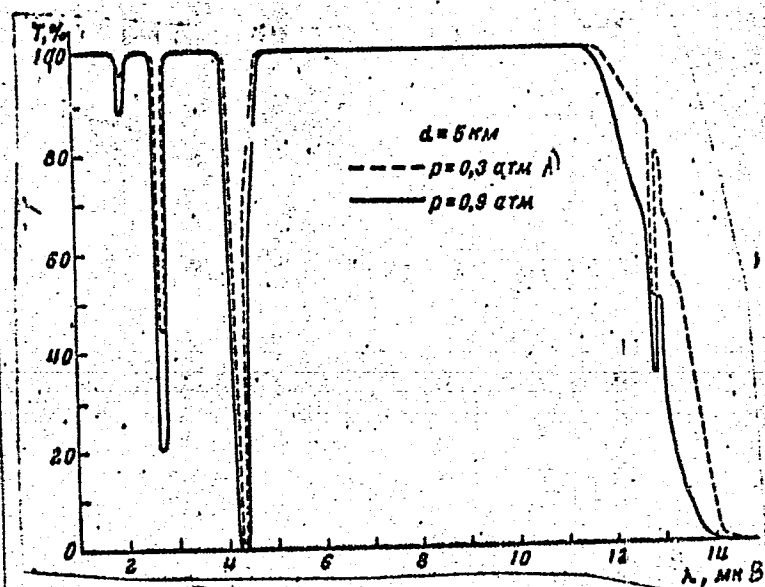


Fig. 3. Spectral transmission of radiation in the range 1-15 μ by carbon dioxide bands at a distance $d = 5 km$ at heights of 10 and 1 km. A) atm; B) μ .

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L 19394-66

ACCESSION NR: AT5011176

ENCL: 04

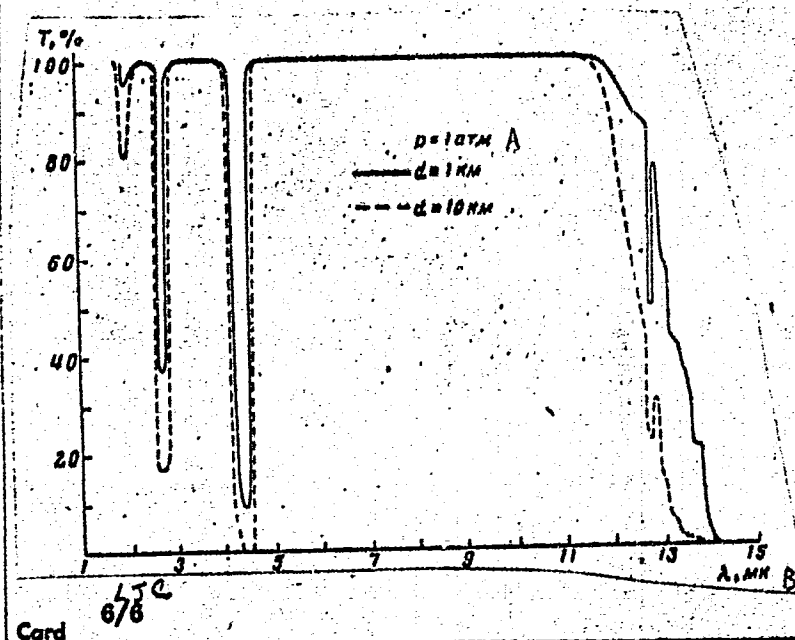


Fig. 4. Spectral transmission of radiation in the range 1-15 μ by carbon dioxide bands in the surface layer at a distance $d = 1$ and 10 km. A) atm; B) μ .

NEKHELOVA, R.D.

Regional studies work in the 7th class. Geog. v shkole no.6:
(MLHA 6:12)

55-57 N-D '53.

(Physical geography—Study and teaching)

VODOP'YANOV, K.A.; VOROZHETSOV, B.I.; LAVROV, M.D.; NESMELOVA, Ye.S.;
POTAKHOVA, G.I.

Effect of radiation on the dielectric properties of electric insulating materials. Atom. energ. 9 no.6:498-500 D '60. (MIRA 13:12)
(Gamma rays) (Dielectrics)

21518

24.2100 1035, 1043, 1138, 1407 S/139/61/000/002/013/018
E194/E435

AUTHORS: Nesmelova, Ye.S., Vodop'yanov, K.A. and Vorozhtsov, B.I.

TITLE: The Influence of Gamma Radiation on the Dielectric Properties of Certain Electrical Insulating Materials VI. Compounds Based on Polyester and Epoxide Resins

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1961, No.2, pp.120-124

TEXT: The dissipation factor ($\tan \delta$) and permittivity of compounds KFMС-2 (KGMS-2), K-31, MBK-1 (MBK-1) and ЭД-6 (ED-6) were determined over a wide range of temperature and frequency before and after gamma radiation with a dose of 10^5 rads. The general conclusion is that the radiation did not alter the mechanism of dielectric loss or significantly impair the electrical properties of the compounds. The measurements were made over the frequency range of 40 to 10^8 c/s, using an unbalanced bridge method in the range of 40 to 10^4 c/s, a Q meter in the range 10^5 to 10^6 c/s and an improved method of determining change of resistance in the range 10^7 to 10^8 c/s. The change of dissipation factor and permittivity with temperature was studied over the range - 60°C

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to the softening temperatures of the specimens at frequencies between 40 c/s and 1 Mc/s. The specimens were discs 30 to 50 mm diameter and 1 to 3 mm thick. The electrodes were prepared by vacuum evaporation of silver. The specimens were irradiated in a betatron type B-15 (B-15) designed by the Tomskiy politekhnicheskii institut (Tomsk Polytechnical Institute). The rate of dosage was 500 rads/min and the total dose in all cases was 10^5 rads. Irradiation was carried out at various temperatures and humidities. Fig.1 gives the test results for a compound KGMS-2 at (curve 1) 40 c/s and (curve 2) 1 Mc/s. The points marked o - relate to material not irradiated, those marked x - to irradiation at a temperature of 20°C, those denoted by a triangle to irradiation at a temperature of +60°C, those denoted by a square to irradiation at -60°C and those denoted by a black circle to irradiation under tropical conditions (+50°C, 98% relative humidity). The properties of this same compound as function of frequency before and after irradiation at a temperature of +20°C are plotted in Fig.2 and from the curves it is concluded that in this compound the losses are due to a combination of relaxation

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and conductivity loss. Radiation does not alter the nature of the temperature relationship of the electrical properties. The results with compound K-31 are plotted in Fig.3 before and after irradiation at a temperature of +20°C. It will be seen that irradiation under tropical conditions increased the dissipation factor at low frequencies and caused a small increase in permittivity. Measurements were also made of volume and surface resistivity which were found to be hardly affected by irradiation under any of the conditions used. Results for compound ED-6 (with quartz sand filler) are plotted in Fig.4 and it will be seen that irradiation has hardly any effect on the results. Graphs of dissipation factor and permittivity of this compound as function of temperature and frequency are plotted in Fig.5 before and after irradiation at a frequency of 40 c/s (curve 1), at a frequency of 10^3 c/s (curve 2) and at a frequency of 1 Mc/s (curve 3). It is concluded that in this compound the dielectric losses consist of relaxation and conductivity losses. Radiation does not alter the nature of the dielectric losses in compound ED-6 and the changes in dissipation factor are small. Test results for compound

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MBK-1 are plotted in Fig.6; there is almost a linear decrease in the dissipation factor as the frequency rises and that lower values are obtained with irradiated samples. It is concluded that in this compound the dielectric loss is of dipole nature. There are 6 figures and 2 Soviet references.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physicotechnical Institute at the Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: June 30, 1960

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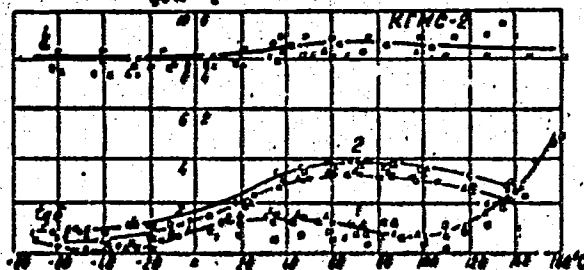


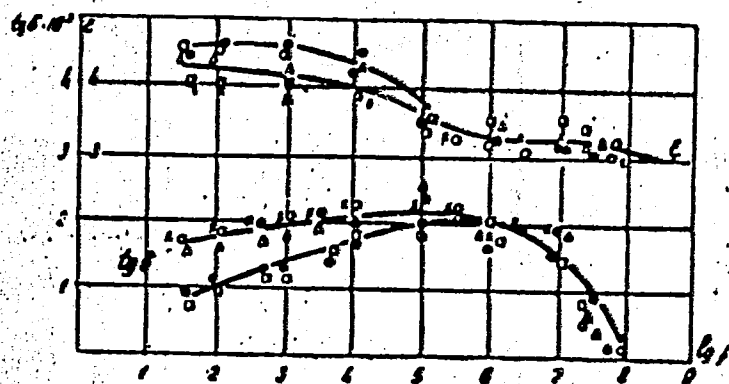
Fig. 1.

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Fig. 1 and 2 from page 2

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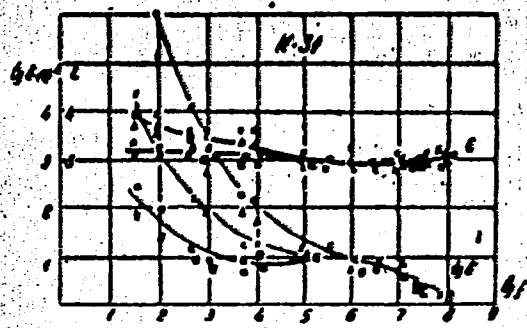


Fig. 3.

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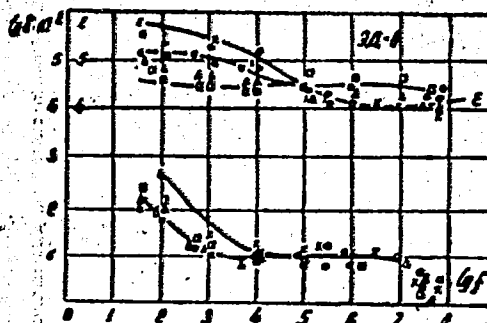
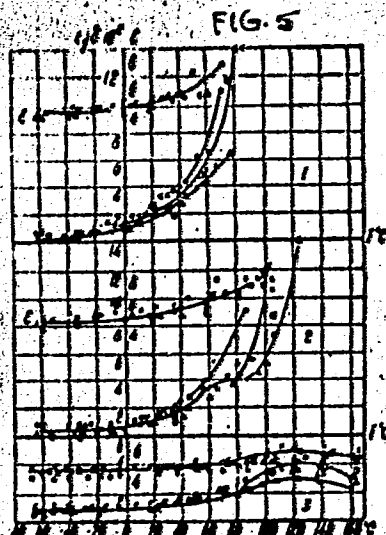


Fig. 4.

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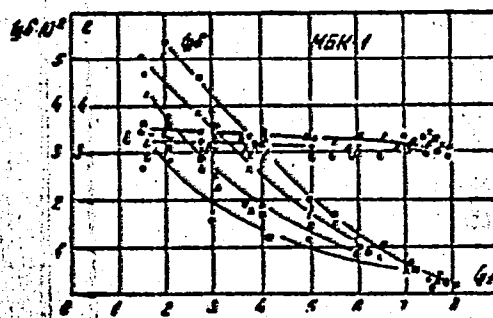


Fig. 6.

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AUTHORS: Vodop'yanov, K.A., Vorozhtsov, B.I.,
Potakhova, G.I., Lavrov, M.D., Nesmelova, Ye.S.,
Nesterov, V.M., Vorozhtsova, I.G., Ol'shanskaya, N.I.,
Zimina, Ye.A., Mikhaylova, T.G., Sitozhevskaya, G.V.,
and Filatov, I.S.

TITLE: The influence of betatron radiation on the
dielectric properties of certain electrical
insulating materials

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika,
no.23, 1962, 12-13, abstract 23 B 67. (In collection:
Elektron. uskoriteli (Electronic Accelerators),
Tomsk, Tomskiy un-t, 1961, 308-318)

TEXT: The temperature and frequency characteristics of
electrical insulating materials were investigated before and after
 γ -irradiation at dosages ranging from 10^4 to 2×10^5 rads with a
dosage rate ranging from 300 to 1300 rads/minute at temperatures
of -60, -20 and +60 °C and under tropical conditions (40 °C and
relative humidity of 98%); the source of radiation was a
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15 MeV betatron. The characteristics of polyethylene were not altered by a radiation dose of 10^5 rads (the measurements were made at about 10^9 c/s). The low-frequency $\tan \delta$ of plastic АГ-4 (AG-4) increased (particularly after irradiation under tropical conditions and at -60°C) but the value in the frequency range $10^5 - 10^6$ c/s did not alter. Evidently irradiation increases the resistive component of loss by conductivity and does not alter the relaxation components. Similar results were obtained for plastics K-114-35, K-211-3 and $\Phi\text{KPM}-25$ (FKPM-25). In the case of textolite with a silicoorganic binder СКМ-1 (SKM-1), a dosage rate of 500 rads/min first increases the low-frequency $\tan \delta$ only up to about 10^5 rads, and then diminishes it. Above 1200 rads/min the $\tan \delta$ steadily decreases. It is possible that with heavy dosages and high dosage rates a process of binding together reduces the $\tan \delta$. In the silicoorganic resins 14Р-2 (14R-2), 14R-6 and 14R-15, dosage rates of 500 rads/min and a dosage of 10^5 rads cause a small increase in conductivity and $\tan \delta$ at low frequency, but this change disappears as temperature curves are being taken, so that the shape of the reverse temperature curve coincides with that

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for the non-irradiated material. Irradiation of varnishes K-47, 976-1, and MPM-16 (MGM-16) under various conditions caused no change in their electrical insulating properties. Irradiation of steatite ceramic (1% BaO, 91.6% Onot talc, 5.2% kaolin, 3.2% boracite) (with a dosage of 2×10^5 rads) did not alter the shape of the temperature curve of $\tan \delta$ (measured at 10^7 c/s) either in weak fields (945 V/cm) or in strong (1890 V/cm). With a dosage of 2.12×10^7 rads, $\tan \delta$ measured at 945 V/cm was not altered at low temperatures but increased appreciably at temperatures above 400 °C.

13 illustrations. 31 references.

[Abstractor's note: Complete translation.]

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S/181/62/004/011/002/049
B102/B104

AUTHORS: Nesterov, V. M., Nesmelova, Ye. S., Ol'shanskaya, N. I.,
Mikhaylova, T. G., and Potakhova, G. I.

TITLE: Reversible electrical effects produced by radiation in di-
electrics

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3010 - 3017

TEXT: The authors investigated the behavior of the electrical parameters ϵ , $\tan \delta$, and σ of various rubber types, fluoroplastics, polyethylene, polychlorvinyl, quartz single crystals and β A-6(ED-6) compound before, during and after γ -irradiation under various temperature conditions. With doses of $10^5 - 10^6$ rad the maximum irradiation intensity was 10-15 r/sec. Up to doses of 10^6 rad, the parameters changed reversibly at the moment when irradiation began. The following effects were observed: σ jumped up to a definite height when irradiation started and dropped down to the starting value when it was switched off. $\tan \delta$ increased in most of the objects studied. In some samples (polyethylene, polychlorvinyl, TCW -35 Card 1/2

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(TSSh-35) and TCW-E (TSSh-B) rubber $\tan \delta$ decreased during the irradiation. In polar dielectrics the maximum frequency dependence of $\tan \delta$ shifted toward lower frequencies when the γ -irradiation was switched on (e.g. in PVC plastics, polyisobutylene, fluoroplastics-3, polyamide-68). In some of these ϵ decreased by ~20% (PVC) when the γ -irradiation was turned on. These effects are mainly due to a Compton effect of the Co^{60} γ -quanta ($h\nu \approx 1.25$ Mev). Using these doses the original state was re-established itself in any case when the irradiation was stopped, but the reversibility cannot be attributed to radiation stability of the material. There are 11 figures and 5 tables.

ASSOCIATION: Tomskiy gosudarstvennyy universitet (Tomsk State University)

SUBMITTED: April 23, 1962

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ACCESSION NR: AP4020309

S/0139/64/000/001/0147/0152

AUTHORS: Nesterov, V. M.; Nesmelova, Ye. S.; Ol'shanskaya, N. I.; Mikhaylova, T. G.

TITLE: Action of gamma-radiation on dielectric properties of some cable materials

SOURCE: IVUZ. Fizika, no. 1, 1964, 147-152

TOPIC TAGS: gamma irradiation, rubber product, resin, dielectric loss tangent, dielectric constant, electrical conductivity, natural rubber, nairit

ABSTRACT: Gamma-irradiation effects on a group of rubber products and resins have been investigated. The studies included dielectric loss tangent, dielectric constant, and electrical conductivity of these materials under Co^{60} γ - irradiation. The largest dose rate was 10 r/sec and the total dosage, 10^5 - 10^6 r. Measurements showed that gamma irradiation has practically no effect on natural rubber, nairit, and resins, TSSH-35 and ShN-40. The dielectric loss tangent in TSSH-35 was small, and electrical conductivity showed large variations only below 0°C. In silicon rubber and silicon resins a reversible increase in electrical conductivity was noticed which led to an increase in the loss tangent of the silicon rubber. A reversible loss tangent was also noticed in SPS-30 rubber. Orig. art. has: 9 figures and 1 formula.

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ACCESSION NR: AP4020309

ASSOCIATION: Sibirskiy fiziko-tekhnicheskoy institut pri Tomskom gosuniversitete
im. V. V. Kuybysheva (Siberian Physic ot Technical Institute at Tomsk State
University)

SUBMITTED: 01May62

DATE ACQ: 31Mar64

ENCL: 00

SUB CODE: HI

NO REF SOV: 004

OTHER: 000

Card 2/2

NESELOVA, Z. N.

Nesmelova, Z. N. -- "The Gas Content of the Salt Layer at the Berezniki Potash Mine." All-Union Sci Res Geological Inst (VSYeGyeI), Min of Geology and Protection of Natural Resources USSR. Leningrad, 1956.
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(Solikamsk—Gas, Natural—Geology)
(Salt deposits)

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Gas phase of the organic matter of bituminous argillites in the
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NESMERAK, Ivan, ins.

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plants. Ibid.:164

Phenol pollution of the Jizera River at the Karane section.
Ibid.:187

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